



STATE OF MARYLAND

DMMH

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November 24, 2009

Public Health & Emergency Preparedness Bulletin: # 2009:46 Reporting for the week ending 11/21/09 (MMWR Week #46)

CURRENT HOMELAND SECURITY THREAT LEVELS

National: Yellow (ELEVATED) *The threat level in the airline sector is Orange (HIGH)
Maryland: Yellow (ELEVATED)

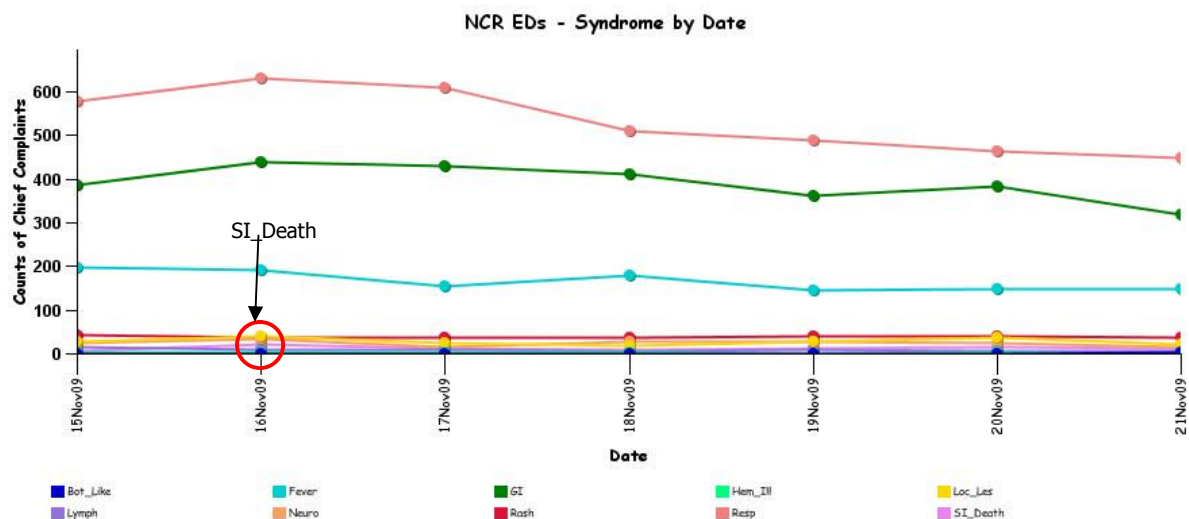
SYNDROMIC SURVEILLANCE REPORTS

ESSENCE (Electronic Surveillance System for the Early Notification of Community-based Epidemics):

Graphical representation is provided for all syndromes, excluding the "Other" category, all age groups, and red alerts are circled.

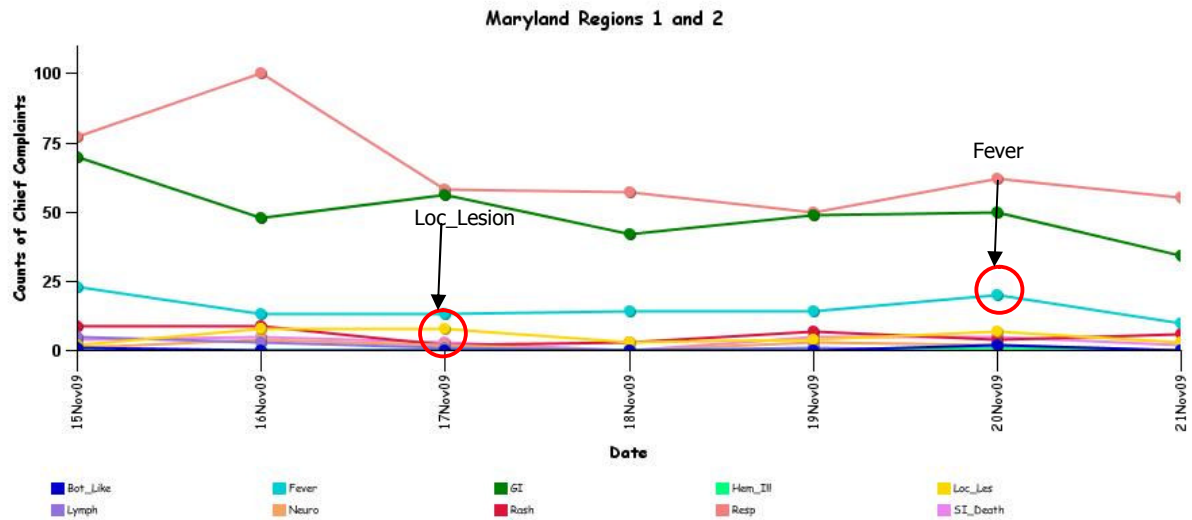
Note: ESSENCE – ANCR Spring 2006 (v 1.3) now uses syndrome categories consistent with CDC definitions.

Overall, no suspicious patterns of illness were identified. Track backs to the health care facilities yielded no suspicious patterns of illness.

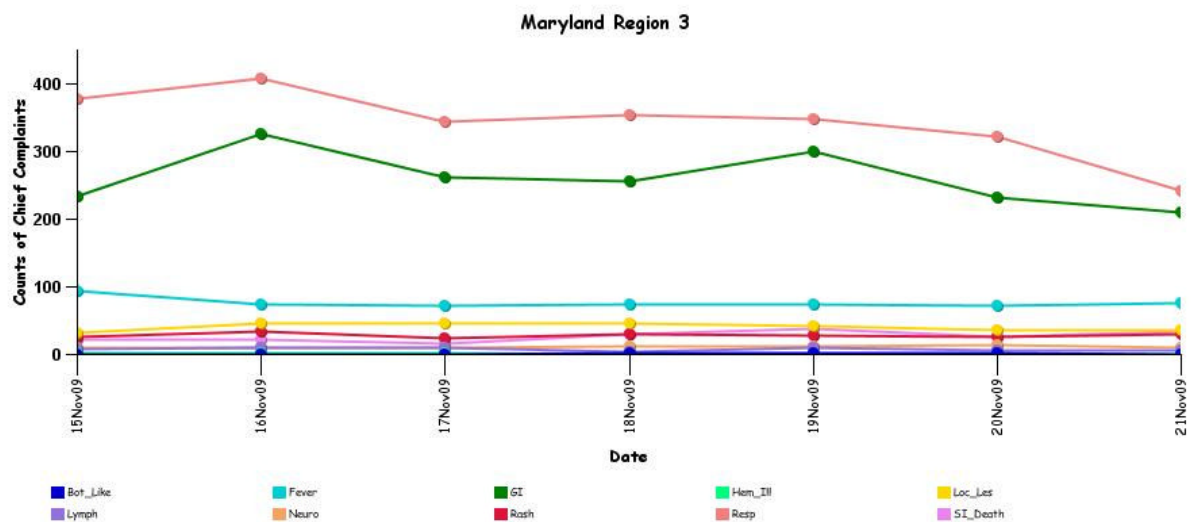


* Includes EDs in all jurisdictions in the NCR (MD, VA, and DC) reporting to ESSENCE

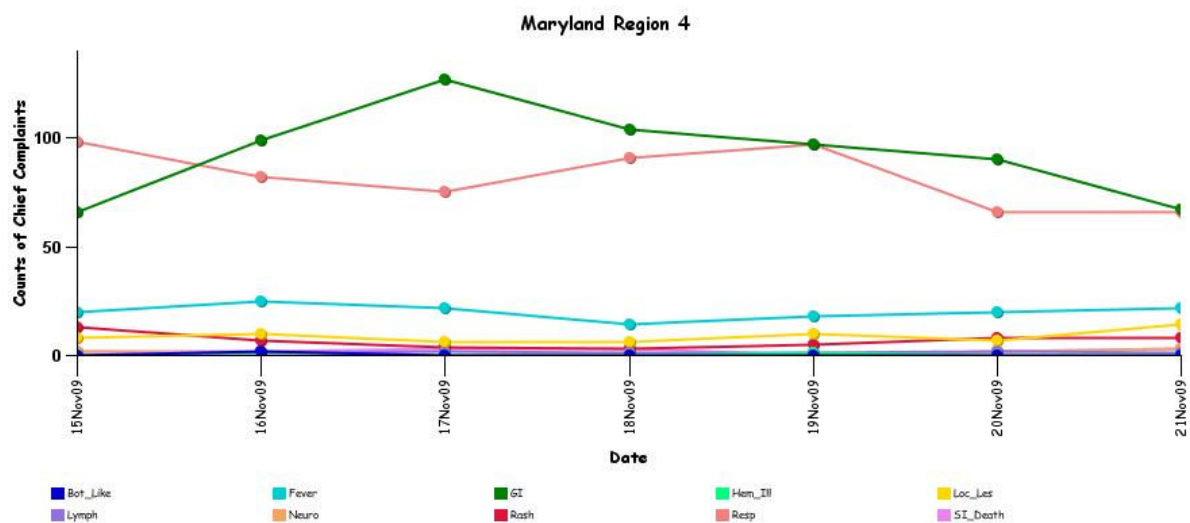
MARYLAND ESSENCE:



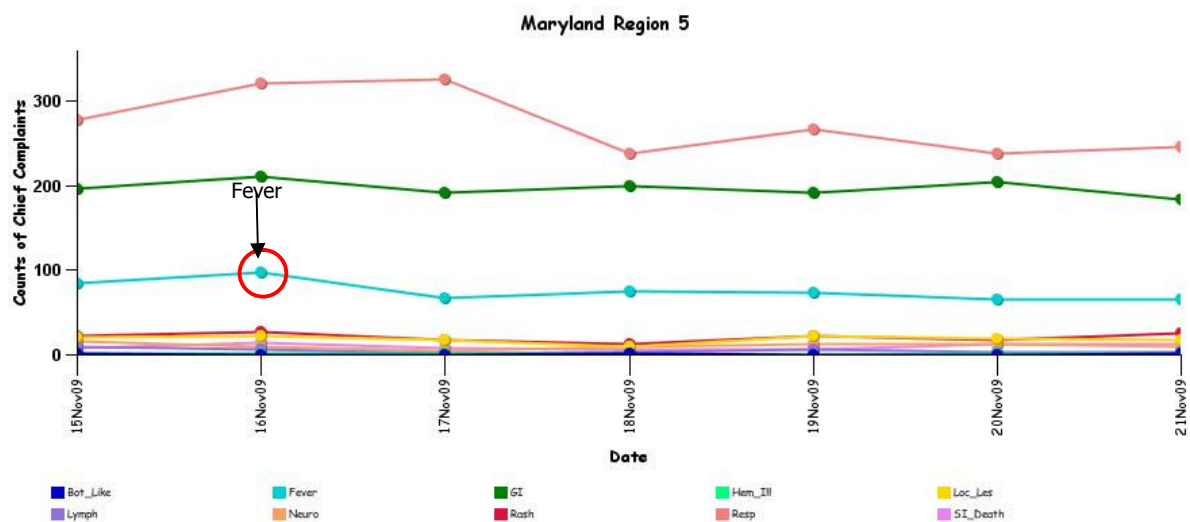
* Region 1 and 2 includes EDs in Allegany, Frederick, Garrett, and Washington counties reporting to ESSENCE



* Region 3 includes EDs in Anne Arundel, Baltimore city, Baltimore, Carroll, Harford, and Howard counties reporting to ESSENCE



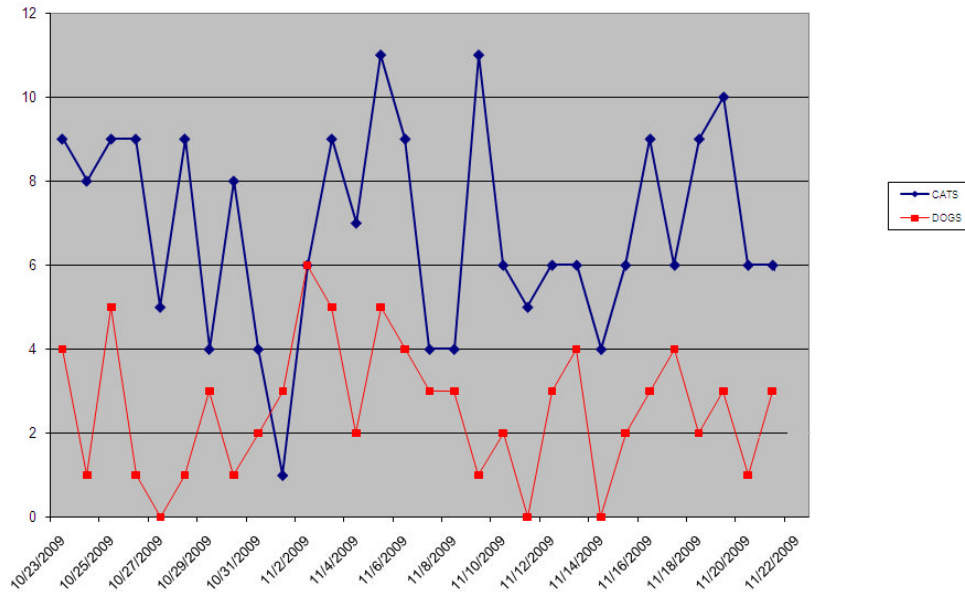
* Region 4 includes EDs in Cecil, Dorchester, Kent, Somerset, Talbot, Wicomico, and Worcester counties reporting to ESSENCE



* Region 5 includes EDs in Calvert, Charles, Montgomery, Prince George's, and St. Mary's counties reporting to ESSENCE

BALTIMORE CITY SYNDROMIC SURVEILLANCE PROJECT: No suspicious patterns in the medic calls, ED Syndromic Surveillance and the animal carcass surveillance. Graphical representation is provided for animal carcass surveillance 311 data.

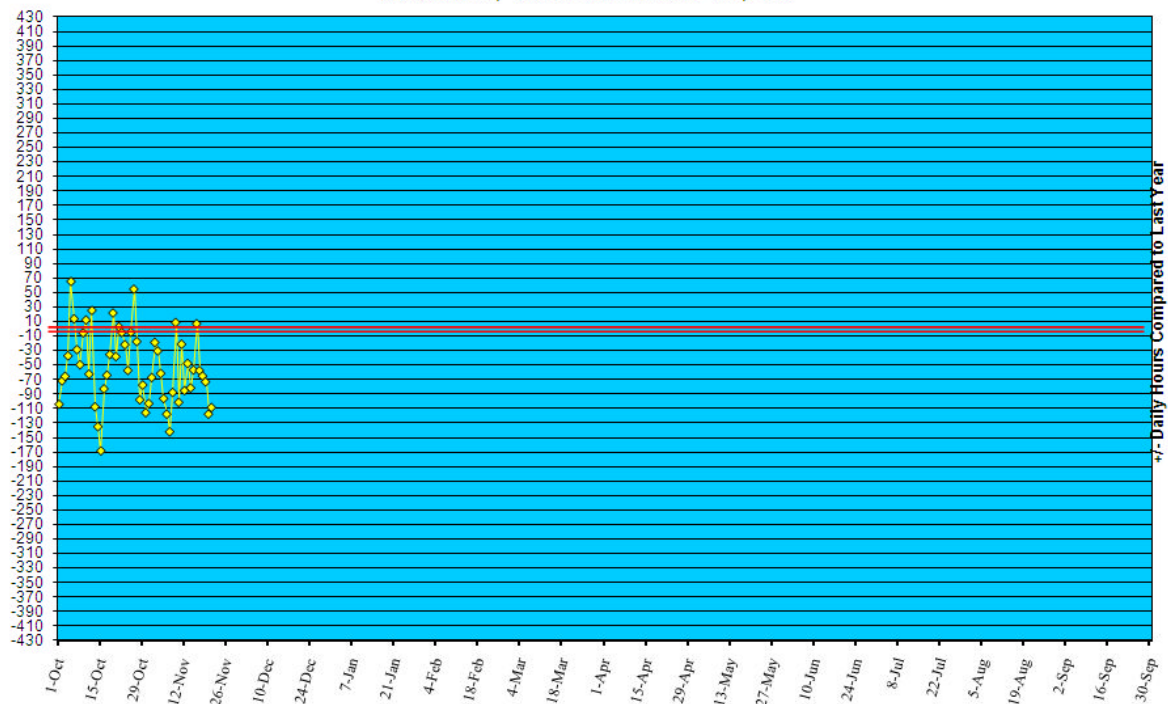
Dead Animal Pick-Up Calls to 311



REVIEW OF EMERGENCY DEPARTMENT UTILIZATION

YELLOW ALERT TIMES (ED DIVERSION): The reporting period begins 10/01/09.

Statewide Yellow Alert Comparison Daily Historical Deviations October 1, '09 to November 21, '09



REVIEW OF MORTALITY REPORTS

Office of the Chief Medical Examiner: OCME reports no suspicious deaths related to an emerging public health threat for the week.

MARYLAND TOXIDROMIC SURVEILLANCE

Poison Control Surveillance Monthly Update: Investigations of the outliers and alerts observed by the Maryland Poison Center and National Capital Poison Center in October 2009 did not identify any cases of possible public health threats.

REVIEW OF MARYLAND DISEASE SURVEILLANCE FINDINGS

COMMUNICABLE DISEASE SURVEILLANCE CASE REPORTS (confirmed, probable and suspect):

Meningitis:	<u>Aseptic</u>	<u>Meningococcal</u>
New cases (Nov 15- Nov 21, 2009):	15	0
Prior week (Nov 08- Nov 14, 2009):	09	0
Week#46, 2008 (Nov 09- Nov 15, 2008):	21	0

OUTBREAKS: 3 outbreaks were reported to DHMH during MMWR Week 46 (November 15- 21, 2009):

2 Respiratory illness outbreaks

- 1 outbreak of INFLUENZA associated with an Institution
- 1 outbreak of ILI associated with a Daycare

1 Foodborne illness outbreak

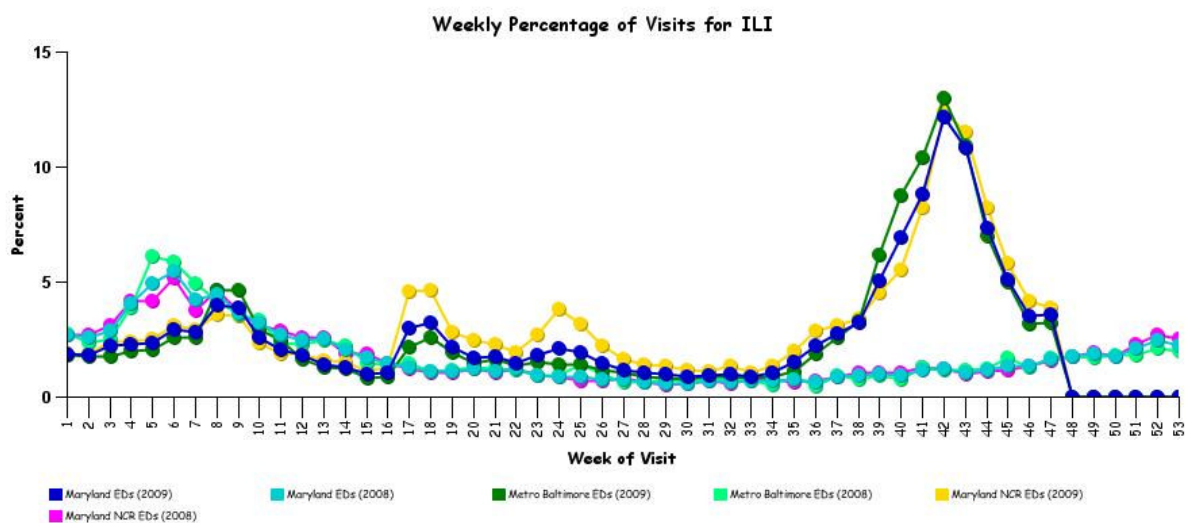
- 1 outbreak of GASTROENTERITIS/FOODBORNE associated with a Meeting

MARYLAND INFLUENZA STATUS: Influenza activity in Maryland for Week 46 is WIDESPREAD.

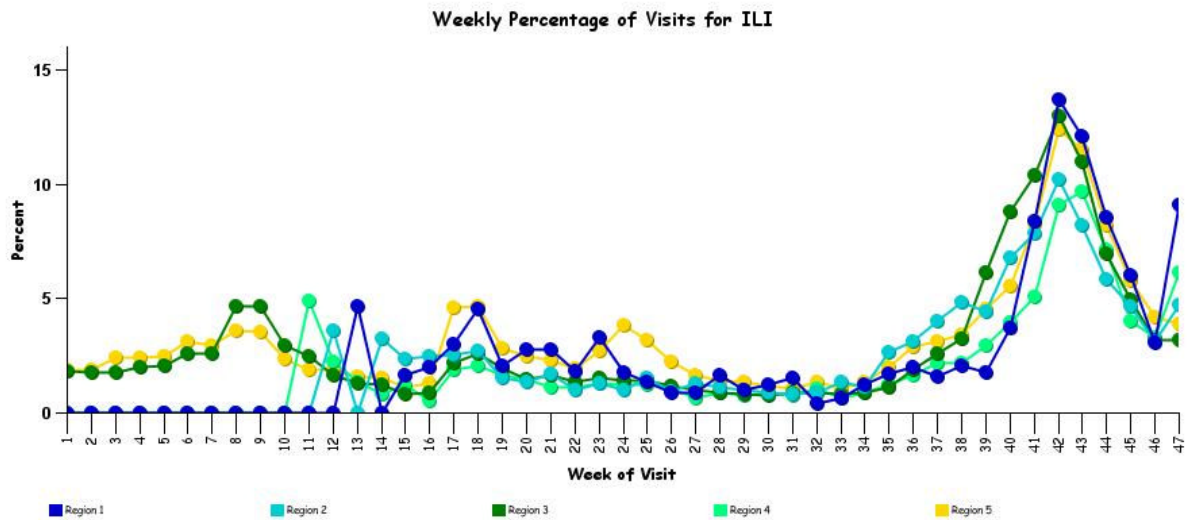
SYNDROMIC SURVEILLANCE FOR INFLUENZA-LIKE ILLNESS

Graphs show the percentage of total weekly Emergency Department patient chief complaints that have one or more ICD9 codes representing provider diagnoses of influenza-like illness. These graphs do not represent confirmed influenza.

Graphs show proportion of total weekly cases seen in a particular syndrome/subsyndrome over the total number of cases seen. Weeks run Sunday through Saturday and the last week shown may be artificially high or low depending on how much data is available for the week.



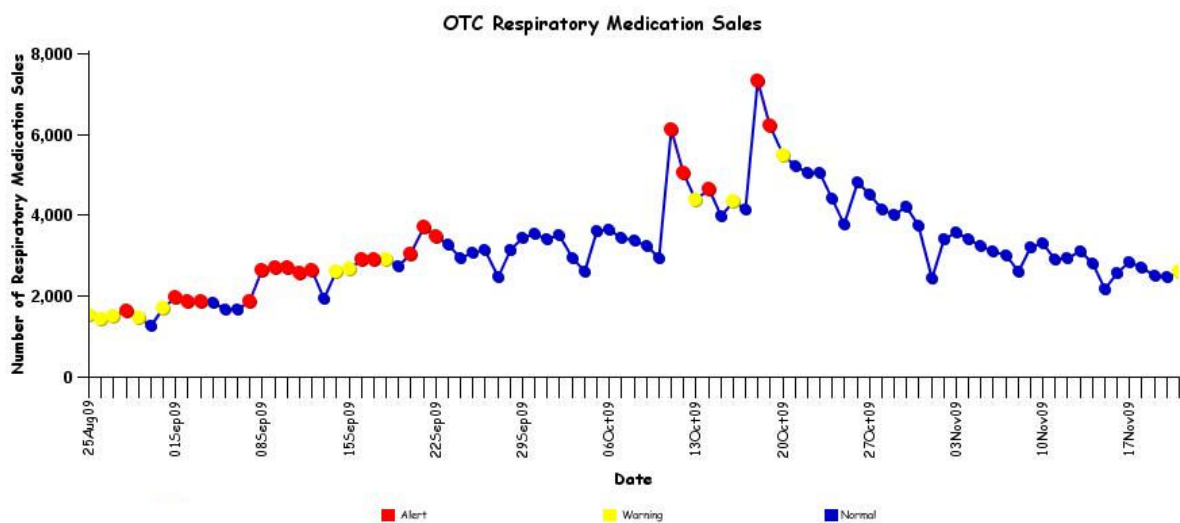
* Includes 2008 and 2009 Maryland ED visits for ILI in Metro Baltimore (Region 3), Maryland NCR (Region 5), and Maryland Total



*Includes 2009 Maryland ED visits for ILI in Region 1, 2, 3, 4, and 5
 2009 data for these regions are depicted separately to establish baselines, due to the addition of new hospitals in these regions.

OVER-THE-COUNTER (OTC) SALES FOR RESPIRATORY MEDICATIONS:

Graph shows the daily number of over-the-counter respiratory medication sales in Maryland at a large pharmacy chain.



PANDEMIC INFLUENZA UPDATE:

WHO Pandemic Influenza Phase: Phase 6: Characterized by community level outbreaks in at least one other country in a different WHO region in addition to the criteria defined in Phase 5. Designation of this phase will indicate that a global pandemic is under way. Definition of Phase 5 is characterized by human-to-human spread of the virus into at least two countries in one WHO region. While most countries will not be affected at this stage, the declaration of Phase 5 is a strong signal that a pandemic is imminent and that the time to finalize the organization, communication, and implementation of the planned mitigation measures is short.

US Pandemic Influenza Stage: Stage 0: New domestic animal outbreak in at-risk country

****More information regarding WHO Pandemic Influenza Phase and US Pandemic Influenza Stage can be found at:**
[http://preparedness.dhmm.maryland.gov/Docs/PandemicInfluenza/PandemicInfluenzaResponseAnnex\(Vers7.2\).pdf](http://preparedness.dhmm.maryland.gov/Docs/PandemicInfluenza/PandemicInfluenzaResponseAnnex(Vers7.2).pdf)

AVIAN INFLUENZA-RELATED REPORTS:

WHO update: As of September 24, 2009, the WHO-confirmed global total of human cases of H5N1 avian influenza virus infection stands at 442, of which 262 have been fatal. Thus, the case fatality rate for human H5N1 is about 60%.

AVIAN INFLUENZA, HUMAN, EIGHTY-EIGHTH CASE (EGYPT): 18 Nov 2009, The patient began to experience fever, cough and difficulty breathing on 11 Nov 2009. He was admitted to Maamoura Chest Hospital on 15 Nov 2009 and received Tamiflu. He reported having slaughtered and other close contact with sick poultry. He was reported in stable condition on 17 Nov 2009. The Ministry of Health (MOH) reported this was the 88th case of highly pathogenic avian influenza [H5N1] in Egypt.

H1N1 INFLUENZA (Swine Flu):

INFLUENZA (H1N1) 2009, ANIMAL (USA): 21 Nov 2009, A 14-year-old black cat in Park City has contracted the swine flu [influenza pandemic (H1N1) 2009], a veterinarian told The Park Record Friday [13 Nov 2009]. The owner of the domestic shorthair had suffered a bout of the H1N1 flu before taking the sick cat to Park City Animal Clinic on 6 Nov 2009, said Dr. Carl Prior, a veterinarian at the animal hospital in Prosspect. "We thought it was H1N1, but now we're 100 percent sure," Prior said in a telephone interview. The cat showed symptoms similar to a housecat in Iowa that doctors have confirmed had the swine flu, he explained. "The cat came in with difficulty breathing and it had some upper respiratory problems," Prior said. "It almost died. Without treatment, this cat would have passed away." A hospital test had confirmed the cat had influenza, Prior said. "With the history, where the owner was diagnosed with H1N1, I thought this cat had H1N1," said Prior, who worked this week with doctors at Iowa State University who helped diagnose the cat in the Midwest with the swine flu. Prior said the case surprised him. "It's going to be kind of crazy if these things can jump between people and animals and animals and people. I'm a little bit worried about the ramifications of it," Prior said. "If animals are really getting this and it is becoming more common, you're going to have to treat pets like you would a person, washing your hands, isolating sick animals and keeping the pets away from the owners and the owners away from the pets." Before Friday, the cat in Iowa was the only reported case of a cat confirmed to have caught the H1N1 flu, said David Kirkpatrick, a spokesman for the American Veterinary Medical Association. A total of 4 ferrets in Oregon had tested positive this week and were recovering from the H1N1 flu, according to Kirkpatrick. "The big animals we're concerned about are going to be the ferrets, birds, pigs and now we're seeing a few cases with the cats," Prior said. "I haven't seen any dogs that have tested positive for it." The cat in Park City has nearly recovered from the [H1N1 influenza] swine flu, he said, adding that another cat in the home was isolated from the sick pet. Several illnesses called zoonotic diseases can transfer between humans and animals. "I just don't think we know the extent of how things transmit," Prior said. "If someone is sick or has a sick pet, we need to be more careful. People can get sick from pets and pets can get sick from people."

INFLUENZA PANDEMIC (H1N1) 2009, MUTANTS (NORWAY): 20 Nov 2009, The Norwegian Institute of Public Health announced today [20 Nov 2009] to have found a mutated version of the influenza pandemic (H1N1) 2009 virus in 3 patients in Norway who had tested positive for the new flu. The Norwegian Institute of Public Health has analysed virus from a number of patients as part of the surveillance of the pandemic flu virus. The viruses have many similarities, but some mutations have been observed. This is normal and most of these mutations will probably have little or no importance. However, one mutation has caught special interest. It has been found in 2 patients who died from the new influenza A (H1N1) and in one patient with severe influenza disease. These were the 1st 2 patients who died from the new influenza in Norway. Some of those who died later have been examined without finding the same mutated virus. The mutation could possibly make the virus more prone to infect deeper in the airways and thus cause more severe disease. We have analysed approximately 70 viruses from confirmed Norwegian cases and found the mutation in only these 3 patients, says Director General Geir Stene-Larsen at the Norwegian Institute of Public Health. Based on what we know so far, it seems that the mutated virus does not circulate in the population, but might be a result of spontaneous changes, which have occurred in these 3 patients. There is no indication that this change in the virus is of any importance for the effect of the vaccine or the effect of antiviral treatment, concludes Stene-Larsen.

INFLUENZA (H1N1) 2009, TAMIFLU RESISTANCE (UNITED KINGDOM): 20 Nov 2009, Health officials say a Tamiflu-resistant strain of swine flu has spread between hospital patients. A total of 5 patients on a unit treating people with severe underlying health conditions at the University Hospital of Wales, Cardiff were infected. Of those, 3 appear to have acquired the infection in hospital. They are thought to be the 1st confirmed cases of person-to-person transmission of a Tamiflu-resistant strain in the world. There have been several dozen reports around the world of people developing resistance to Tamiflu while taking the drug -- but they have not passed on the strain to others. Just one possible cases of person-to-person transmission of a resistant strain has been recorded -- between 2 people at a US summer camp -- and this has never been confirmed. Two of the University Hospital Wales patients have recovered and have been discharged from hospital; one is in critical care and 2 are being treated on the ward. The health officials stressed there was no risk to anyone else. They said tests were being carried out to confirm exactly what happened. The UK has bought enough doses of Tamiflu, which can shorten the duration of swine flu and reduce the risk of complications, for half the population. So any spread of a Tamiflu-resistant strain of the illness is a serious public health concern. The [pandemic] H1N1 virus has been remarkably stable since it emerged in April [2009], but virologists had been half expecting new resistant strains to emerge. Dr Roland Salmon, Director of the National Public Health Service for Wales's Communicable Disease Surveillance Centre, said: "The emergence of influenza A viruses that are resistant to Tamiflu is not unexpected in patients with serious underlying conditions and suppressed immune systems, who still test positive for the virus despite treatment. "In this case, the resistant strain of swine flu does not appear to be any more severe than the swine flu virus that has been circulating since April [2009]." Dr Tony Jewell, Chief Medical Officer for Wales, said: "We know that people with suppressed immune systems are more susceptible to the swine flu virus, which is why they are a priority group under the 1st phase of the vaccination programme in Wales which is progressing at pace. "We have stringent processes in place for monitoring for antiviral resistance in the UK so that we can spot resistance early and the causes can be investigated and the cases managed. "Identifying these cases shows that our systems are working so patients should be reassured. "Treatment with Tamiflu is still appropriate for swine flu and people should continue to take Tamiflu when they are prescribed it. "It's also important that good hygiene practices are followed to further prevent the spread of the virus." On Thursday [19 Nov 2009] it was announced that more than 3 million healthy children under 5 across the UK will be offered the swine flu jab. Figures released on Thursday [19 Nov 2009] showed an estimated 53 000 new cases of swine flu in England in the last week, down from 64 000 in the week before. In Scotland, the figure was 21 200, down from about 21 500 in the previous 7 days. The rate of flu-like illnesses diagnosed by general practitioners (GPs) in Wales dropped to 36 cases for every 100 000 people from 65.8 the previous week.

INFLUENZA PANDEMIC (H1N1) 2009, HAJJ PILGRIMS (SAUDI ARABIA): 20 Nov 2009, So far 20 swine flu [influenza pandemic (H1N1) 2009 virus infection] cases have been reported among foreign Hajj pilgrims since they started arriving for this year's [2009] pilgrimage, health minister Dr Abdullah Al-Rabeeah said at a press conference in Jeddah on Thursday [19 Nov 2009]. Al-Rabeeah said the Ministry has ensured adequate supplies of medicine to treat the disease, and this includes 1.5 million doses of the H1N1 vaccine for pilgrims. On Thursday [19 Nov 2009] he held a meeting with top officials to review the Ministry's preparations to meet pilgrims' health needs. He said the Ministry had taken every precaution to protect pilgrims against swine flu and other contagious diseases. "We have also installed the Biomimetic and Cognitive Robotics (BCR) laboratory to detect swine flu," he said. He said BCR tests are available at Mina Hospital, in addition to the 3 high-tech labs in Makkah (Mecca). He stressed that the Ministry is able to contain the flu because of its intensive effort in coordination with the World Health Organization. The Ministry of Health has set up 14 hospitals in Makkah with 2782 beds. Besides these facilities, these hospitals are equipped with 244 beds in intensive care units and 287 emergency beds. There are 35 permanent health centers in Makkah, 9 seasonal health centers along the Makkah-Madinah Expressway, and 4 centers inside the Grand Mosque in Makkah. 28 health centers will operate in Mina, 46 in Arafat, and 6 in Muzdalifah. The ministry has deployed 10 000 health workers including 100 doctors, 60 of them foreign specialists in infectious diseases, and 147 foreign nurses for intensive care units and emergency centers. The UAE [United Arab Emirates] Ministry of Health has designated 4 locations in Dubai and another 30 across the country for vaccinating pilgrims and completion of other medical checkups needed for Hajj. All UAE pilgrims will obtain the yellow health international vaccination certificate once they have received the swine flu vaccination. The certificate also proves all other vaccinations required for Hajj have been administered, in accordance with Saudi requirements.

INFLUENZA PANDEMIC (H1N1) 2009, EPITOPE ANALYSIS: 18 Nov 2009, As the number of deaths related to the pandemic H1N1 virus, commonly known as "swine flu," continues to rise, researchers have been scrambling to decipher its inner workings and explain why the incidence is lower than expected in older adults. In a study appearing online and in a future issue of Proceedings of the National Academy of Sciences [see comment below], a UT [University of Texas] Southwestern Medical Center researcher and his collaborators in California show that the molecular makeup of the current H1N1 flu strain is strikingly different from previous H1N1 strains as well as the normal seasonal flu, especially in structural parts of the virus normally recognized by the immune system. Prior research has shown that an individual's immune system is triggered to fight off pathogens such as influenza when specific components of the immune system -- namely antibodies, B-cells, and T cells -- recognize parts of a virus known as epitopes. An individual's ability to recognize those epitopes -- spurred by past infections or vaccinations -- helps prevent future infections. The challenge is that these epitopes vary among flu strains. "We hypothesize that older people are somewhat protected because the epitopes present in flu strains before 1957 may be similar to those found in the current H1N1 strain, or at least similar enough that the immune system of the previously infected person recognizes the pathogen and knows to attack," said Dr Richard Scheuermann, professor of pathology and clinical sciences at UT Southwestern and a co-author of the paper. "Those born more recently have virtually no pre-existing immunity to this pandemic H1N1 strain because they have never been exposed to anything like it." Between April and mid-October [2009], the current H1N1 virus sickened roughly 22 million Americans and contributed to or caused about 4000 deaths, according to the figures recently released by the Centers for Disease Control and Prevention [CDC]. The deaths included 540 children. The CDC report also estimates the total number of hospitalizations at around 98 000 nationwide, with children accounting for 36 000 of the total. For this study, researchers examined whether epitopes present in the seasonal flu strains between 1988 and 2008 also are found in the existing H1N1 strain. They used data catalogued in the Immune Epitope Database as well as information from the National Center for Biotechnology Information (NCBI) and the Global Initiative on Sharing

Avian Influenza Data's (GISAID) influenza genetic sequence databases. Dr Scheuermann said his team also analyzed the virus genetic data using the NIH-sponsored Influenza Research Database <<http://www.fludb.org>>), which he oversees at UT Southwestern. The researchers found major genetic differences between the pandemic H1N1 strain and seasonal strains, potentially explaining why children and young adults are more susceptible to the H1N1 strain now circulating worldwide. "Normally, older adults are generally more susceptible to pathogens like influenza, however, for the pandemic H1N1 strain this does not seem to be the case," said Dr Scheuermann, who is also a member of the Cancer Immunobiology Center at UT Southwestern. "The antibody epitopes, which provide protection against disease, for the pandemic H1N1 strain are virtually all different from those present in recent seasonal strains, so young people have no built-in protective mechanisms. We speculate that older adults may have been exposed to viruses in their youth in which the epitopes are more similar." At this point, he said, scientists must continue to be vigilant about tracking the pandemic H1N1 strain as it continues to evolve. "H1N1 has not mutated in such a way as to make people sicker, but it could happen," Dr Scheuermann said. "It is important that individuals follow the public health guidelines regarding vaccination as the H1N1 vaccine becomes more widely available."

INFLUENZA PANDEMIC (H1N1) 2009, PANDEMIC ACTIVITY (WORLDWIDE): 16 Nov 2009, Pandemic activity is showing early signs of peaking in some parts of North America, but is on the rise in several European countries as well as those in Central and Eastern Asia, the World Health Organization (WHO) reported today [13 Nov 2009]. In the United States, southern and southeastern states that were among the 1st to report illness spikes at the end of the summer 2009 may have already seen a peak in cases, the WHO said in its weekly update today [13 Nov 2009]. Meanwhile, pandemic activity has become more intense in Canada over the past 3 weeks, with illness increases spread from west to east. Health officials in British Columbia said yesterday [12 Nov 2009] that flu activity might be leveling off in the southern and central part of the province, according to a report today from the Metro Vancouver newspaper. The WHO reported that flu activity in Mexico has also been widespread throughout the country since early September 2009, particularly in the central and southern regions. In Europe and Central Asia, the virus is spreading eastward, but disease activity may be peaking in some areas that had early autumn outbreaks such as Iceland, Ireland, and parts of the United Kingdom, including Northern Ireland. England's chief medical officer, Liam Donaldson, said yesterday [12 Nov 2009] that the country's number of new flu cases fell by 1/4th last week, but he said it was too soon to say the pandemic has peaked and said the decrease in illnesses might be fueled by a school break, BBC News reported. The WHO said today [13 Nov 2009] that its initial investigation into a sharp rise in cases in the Ukraine found that the numbers of severe cases were not out of line when compared with pandemic outbreaks in other countries and do not portray any changes in pandemic H1N1 transmission or virulence. The WHO's European regional office said in a statement yesterday [12 Nov 2009] that its investigators have returned to Kiev where they had meetings with the country's prime minister and president to discuss actions needed to slow the spread of the virus and which groups to prioritize for vaccination. Though the WHO investigators in the Ukraine are still working on their final assessment, they said the country's health facilities are well prepared to manage the surge of flu cases. More than 99 percent of the viruses sub-typed in Europe are the pandemic H1N1 strain, except in the Russian Federation, where 10 percent were seasonal H3N2 and H1N1 subtypes. Meanwhile, some Western Asian and Middle Eastern countries are reporting sharp increases over the past 3 weeks, including Israel and Afghanistan. In Eastern Asia, Mongolia is reporting intense and increasing flu activity, which is severely affecting the country's healthcare system. Flu activity is increasing in China and Japan, but flu-like illnesses seem to be leveling off in Hong Kong and on Hokkaido, Japan's northern island. Flu illness rates may have recently peaked in some Caribbean countries, the WHO said, adding that most countries in tropical regions of Central and South America report slowing flu activity. Transmission is also declining in most parts of South and Southeast Asia except for Nepal and Sri Lanka. The only Southern Hemisphere location reporting unusual flu activity is Argentina, where a cluster of cases has been detected in the country's capital. Three African countries recently reported their 1st confirmed pandemic H1N1 cases: Somalia, Nigeria, and Burundi. So far, at least 6260 confirmed deaths from the virus have been reported to the WHO.

Resources:

<http://www.cdc.gov/h1n1flu/>

<http://www.dhmf.maryland.gov/swineflu/>

NATIONAL DISEASE REPORTS

No new disease outbreaks related to CDC Critical Biological Agents were reported for MWWR week 46.

INTERNATIONAL DISEASE REPORTS

JAPANESE ENCEPHALITIS (INDIA): 19 Nov 2009, A total of 9 patients have died since last Friday [13 Nov 2009], official sources said, adding the toll due to different types of brain fever has reached 515 in eastern districts since January this year [2009]. Here [Gorakhpur] and in Basti division, 16 new patients suffering from the disease have been admitted to various government hospitals since yesterday [26 Nov 2009], additional director health LP Rawat said. He said a total of 2947 patients suffering from Japanese encephalitis [virus infection] and acute encephalitis syndrome (AES) were admitted this year [2009] to BRD Medical College and other hospitals of the region. Of this, 515 patients died. (Viral Encephalitis is listed in Category B on the CDC list of Critical Biological Agents) *Non-suspect case

BOTULISM, SMOKED CANADIAN FISH (FRANCE ex FINLAND): 19 Nov 2009, A family cluster of 3 cases of type E botulism was identified in southeast France in September 2009. The suspected food source of infection was a vacuum-packed hot-smoked whitefish of Canadian origin purchased by the family during a visit to Finland and consumed several weeks later in France on the day prior to symptom onset. No leftover fish was available to confirm this hypothesis. Vacuum packed hot-smoked whitefish has previously been associated with cases of type E botulism in multiple countries, including Finland, Germany, the USA, and Israel. (Botulism is listed in Category A on the CDC list of Critical Biological Agents) *Non-suspect case

OTHER RESOURCES AND ARTICLES OF INTEREST

More information concerning Public Health and Emergency Preparedness can be found at the Office of Preparedness and Response website: <http://preparedness.dhmdh.maryland.gov/>

Maryland's Resident Influenza Tracking System: www.tinyurl.com/flu-enroll

NOTE: This weekly review is a compilation of data from various surveillance systems, interpreted with a focus on a potential BT event. It is not meant to be inclusive of all epidemiology data available, nor is it meant to imply that every activity reported is a definitive BT event. International reports of outbreaks due to organisms on the CDC Critical Biological Agent list will also be reported. While not "secure", please handle this information in a professional manner. Please feel free to distribute within your organization, as you feel appropriate, to other professional staff involved in emergency preparedness and infection control.

For questions about the content of this review or if you have received this and do not wish to receive these weekly notices, please e-mail me. If you have information that is pertinent to this notification process, please send it to me to be included in the routine report.

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